METHOD FOR LOCALLY FORMING DIFFERENT BAND GAP IN QUANTUM WELL BY DIELECTRIC-SEMICONDUCTOR COMPOSITE COVER LAYER

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Abstract of **KR 20010036949 (A)**

PURPOSE: A method for locally forming a different band gap in a quantum well by a dielectric-semiconductor composite cover layer is provided to regulate a degree of disorder of the quantum well. CONSTITUTION: The method begins with growing an InGaAs/InGaAsP quantum well substrate by a chemical beam epitaxy technique. Next, a dielectric thin layer made of such as SiO2 or SiNx is formed as a cover layer on the quantum well substrate by a plasma-enhanced chemical deposition technique. After a heat treatment step is carried out at a temperature of 600 - 800[deg.]C for 4 - 16 minutes, the dielectric thin layer is removed. In addition, InP, InGaAs or InGaAsP is used as a semiconductor cover layer.